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AMSAT NEWS SERVICE
ANS-302

ANS is a free, weekly, news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

Please send any amateur satellite news or reports to:

ans-editor(a)amsat.org

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  From AMSAT HQ SILVER SPRING, MD.
October 28, 2012
To All RADIO AMATEURS
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AMSAT Board Elects Senior Officers for 2012

Election of AMSAT's Senior Officers was one of the first orders of business to be settled once the AMSAT Board of Directors meeting opened on October 25, prior to the start of the 2012 AMSAT Space Symposium held in Orlando, Florida.

The following positions were voted upon and filled:

Barry Baines, WD4ASW	President
Drew Glasbrenner, KO4MA	Vice-President Operations
Gould Smith, WA4SXM	Vice President User Services
Tony Monteiro, AA2TX	Vice-President Engineering
Frank Bauer, KA3HDO	Vice-President Human Spaceflight
Mark Hammond, N8MH	Vice-President Educational Relations
Alan Biddle, WA4SCA	Secretary
Keith Baker, KB1SF/VA3KSF	Treasurer
Martha Saragovitz	Manager

The following Senior Officer positions remained open at this time awaiting appointments:
Executive Vice President

Vice-President Marketing

The AMSAT Board of Directors elected on September 15 include:
Barry Baines, WD4ASW
Alan Biddle, WA4SCA
Dr. Thomas A. Clark, K3IO
Drew Glasbrenner, KO4MA
Lou McFadin, W5DID
Tony Monteiro, AA2TX
Gould Smith, WA4SXM
Mark Hammond, N8MH (First Alternate)
Patrick Stoddard, WD9EWK (Second Alternate)

At the Board Meeting AMSAT Vice-President User Services Gould Smith, WA4SXM, announced the appointment of JoAnne Maenpaa, K9JKM as the Editor of the AMSAT Journal. JoAnne currently serves as the Senior Editor of the AMSAT News Service. She will make the transition to the Journal effective immediately. Lee McLamb, KU4OS once again is assuming the role as the Senior Editor of the AMSAT News Service. The Board noted that volunteer positions remain open for both the Journal team and the AMSAT News Service team.

[ANS thanks the AMSAT Board of Directors for the above information]

Fox-1 Satellite in Development; Working on Partnerships for Launch

AMSAT Vice-President Engineering, Tony Monteiro, AA2TX presented the latest status on the design, development, and construction of the Fox-1A satellite project. This is the 1U cubesat which is slated as the FM repeater transponder to replace AO-51.

Project ELaNa, NASA's "Educational Launch of NanoSat" managed by the Launch Services Program at the Kennedy Space Center, accepted the AMSAT Fox-1 cubesat into this educational launch initiative on its merits toward meeting NASA's strategic and educational goals.

AMSAT met the NASA goals by designing a satellite mission in support of education with amateur radio included:

+ The Fox family of cubesats are ham radio transponders that are designed to host science experiment payloads.

+ AMSAT will partner with universities to develop these science and educational missions.

+ When the university missions gain a free launch for their primaary scientific missions AMSAT's amateur radio transponder will also be aboard.

+ After the primary science/education mission is completed the AMSAT transponder will become available full-time for amateur radio service.

AMSAT will work with NASA in a collaborative agreement where NASA will cover the integration and launch costs. In the meantime, AMSAT must still pay for the development costs of the cubesats and find talented volunteers to work on the design.

Fox-1A's design goals include:

+ Fox-1 is designed to operate in sunlight without batteries once the battery system fails. This applies lessons learned from AO-51 and ARISSat-1 operations.

+ In case of IHU computer failure Fox-1 will continue to operate its FM repeater in a basic, 'zombie sat' mode, so that the repeater remains on-the-air.

+ Fox-1 is designed as the immediate replacement for AO-51. Its U/V (Mode B) transponder will make it even easier to work with modest equipment.

+ From the ground user's perspective, the same FM amateur radio equipment used for AO-51 may be used for Fox-1.

Fox-1 continues AMSAT's long record of success as an all-volunteer organization providing access to space communications for students in a curriculum setting as well the private citizen.

AMSAT's Fox-1 project timeline is based on targeting a launch in the second half of 2013. NASA will determine on which flight each of the Project ELaNa CubeSats fly.

Watch for news in the AMSAT Journal for details of AMSAT's partnership with universities, the National Science Foundation, and NASA in seeking grants for getting the first and future Fox generation satellites into orbit.

[ANS thanks AMSAT Vice-President Engineering, Tony Monteiro, AA2TX and the AMSAT Board of Directors for the above information]

AMSAT News Service Welcomes New Weekly Editor EMike McCardel, KC8YLD

EMike McCardel, KC8YLD is joining the AMSAT News Service as one of the weekly rotating editors. EMike will welcome your news of Amateur Radio in Space via the ans-editor(a)amsat.org or his KC8YLD(a)amsat.org e-mail address.

He is active on the amateur satellites using his Yaesu VX8R and VX7R radios. EMike is already active within AMSAT-NA serving as Associate Direction of Education working on our educational relations with Mark Hammond, N8MH. The AMSAT-Edu e-mail list, supporting our educational outreach and planning, is moderated by EMike.

Recently EMike worked with Mark, N8MH; Dale, KJ6VUC; Tom, KA6SIP; Dave, KB5WIA; Joe, K6WAO; Barry, WD4ASW; and Alan, WA6DNR as a member of the AMSAT team During PACIFICON October 12-14. This effort included a successful ARISS contact, support in the ARRL Youth Lounge making CubeSat models, the AMSAT table, and satellite demonstrations.

EMike is an extra class operator. He is a member and past-president of the Mount Vernon Amateur Radio Club, the Inter-City Radio Club in Mansfield, OH, and a member of the ARRL. He is the ARRL Ohio Section Affiliated Club Coordinator, ARRL appointed PIO and VE.

Other club affiliations include the Ohio Single Side Band Net, the Old Man International Sideband Society, and the Straight Key Century Club. His interest in emergency communications has lead to taking two ARECC and several FEMA courses leading to certificates in Incident Command System/National Incident Management System, and the

National Response Plan.

ANS Bulletins will be coming from EMike as he joins the weekly editor rotation with Lee, KU4OS and JoAnne, K9JKM. The AMSAT News Service Team still has a couple of openings for weekly editors. With 4 editors each would have a bulletin for one week of the month. JoAnne has taken over as Editor of the AMSAT Journal so ANS has an immediate opportunity for a new volunteer. Professional writing/editing experience is NOT a requirement. Your interest and enthusiasm in following and teaching on amateur radio in space will get you started.

Welcome aboard EMike, KC8YLD!

[ANS thanks AMSAT Vice-President Gould Smith, WA4SXM for the above information]

Japan PRISM Satellite Begins Amateur AX.25 Store-and-Forward Service

The team that developed the PRISM satellite have announced it is being opened up for use by radio amateurs during afternoon passes.

The satellite was built by the University of Tokyo and launched on January 23, 2009 into a 660 by 670 km orbit. It uses AX.25 packet radio and can now be used by amateur radio operators as a store-and-forward message box.

Full details at:
http://www.space.t.u-tokyo.ac.jp/prism/en/HAMservice.html
(Ed. Note - if this link does not work with FireFox try using Internet Explorer.)
Additional information is posted at: http://www.uk.amsat.org/?p=11174

Downlink Frequency Information

Beacon 437.2500 MHz CW (80 mW)
Data 437.4250 MHz AFSK 1200 BPS (800mW AX.25)

To gain access to the uplink frequency and the store-and-forward protocol the amateur radio user must agree to comply with the terms of the HAM Radio Service by clicking on the "Read the Terms" button at the bottom of the web page. If you agree then click on the "Agree" item.

Upon agreement to the user terms you will be allowed access to a technical information page describing the communications protocol and the uplink frequency.

[ANS thanks the PRISM team at the University of Tokyo for the above information]

WS4FSM Hosts the Largest School Contact Ever With the ISS

On Tuesday, October 30, at 11:58AM EDT (15:58 UTC) most of Palm Beach County's 187,000 students will be watching live as 10 students and 2 teachers make contact with the International Space Station.

The contact will be from the Motorola theater at the South Florida Science Museum (see: http://www.sfsm.org). Amateur Radio Station WS4FSM is part of a permanent Ham Radio Center exhibit built and maintained by the West Palm Beach Amateur Radio Group.

Both a tower mounted tracking antenna and a mast mounted Eggbeater antenna have been loaned to the club by area Hams for making this contact.

The event will be televised live by closed circuit TV beginning about 11:00 AM EDT (15:00 UTC) to classrooms in all the county schools and streamed on the web at: https://vodcast.palmbeachschools.org/player/ten1

Parents at home will be able to view this contact on the web stream and on the school's educational channel and Comcast Cable in South Florida. The final audience is expected to be over 250,000 live viewers.

The students were selected from the entire school district, including private and home schooler's, and entered by submitting an essay about their interest in space exploration. Tens of thousands of essays were read and sorted by the committee which included educators, astronomers, scientists, former astronauts, and Ham Radio operators. The event is being co-sponsored by the Palm Beach Post who ran a series of articles and published the winning essays.

An educational DVD will be produced for use in the school system at other times and selected portions will be available on YouTube from the West Palm Beach Amateur Radio Group.

For information on WS4FSM see: http://www.wpbarc.com/WS4FSM

For information on the West Palm Beach Amateur Radio Group see: http://www.wpbarc.com

[ANS thanks Tom Loughney, AJ4XM, President, West Palm Beach Amateur Radio Group Inc. for the above information]

Report Available for Japan's UNISEC Satellite Projects

Japan's University Space Engineering Consortium (UNISEC) has compiled a report on the current state of Japanese University Micro/Nano/Pico-satellite Projects.

The 100 page report is accessible via these "Download" button at the bottom of this page: http://www.unisec.jp/member/jusat-e.html

[ANS thanks UNISEC for the above information]

FUNcube-2 Boards Delivered to Clyde Space for UKube-1 Nanosatellite

For this story with additional photos see: http://www.uk.amsat.org/?p=11133

On Friday, October 19, after some final testing and characterisation checks completed at the facilities of ISIS BV in Delft, AMSAT-UK handed over the set of three PCBs that form the FUNcube-2 subsystem on the UKube-1 spacecraft to Clyde Space Ltd in Glasgow. Clyde Space are leading the development and assembly of this CubeSat project for the UK Space Agency.

The PCBs were taken to Glasgow in a Pelicase by Graham Shirville, G3VZV who handed them to Steve Greenland Systems Engineer at Clyde Space.

The three PCB's comprise:
+ CCT Board - Command, control and telemetry, interfaces via I2C with the antenna deployment system and the main OBC (On-Board Computer).
+ RF Board - Command receiver, telemetry transmitter and linear transponder of the FUNcube satellite educational payload also includes telemetry sensors.
+ PA Board - 400 mW VHF amplifier and sensors.

FUNcube-2 on UKube-1 will provide a 435/145 MHz (U/V) linear transponder for amateur radio SSB/CW communications and telemetry for school students around the world.

The UKube-1 spacecraft is expected to be launched on a Soyuz-2 launcher from Baikonur in Kazakhstan in March 2013. UKube-1 is a demonstration CubeSat mission designed to provide a platform for up to three technology demonstrator payloads. In addition to these payloads the satellite will incorporate innovative attitude determination and control systems, deployable arrays, FPGA on board mission controllers.

There will be four communications systems:
+ A U/V transceiver from ISIS BV, using either 1k2 or 9k6 BPSK for downlinks.
+ A FUNcube compatible U/V transponder and telemetry transmitter provided by AMSAT-UK for educational outreach, amateur transponder operation and redundant telecommand.
+ A 1 watt S Band transmitter from Cape Peninsula University of Technology, Cape Town, for high data rate mission data downlinking using up to 1 Mbps QPSK or OQPSK modulation.
+ myPocketQub 442 SuperSprite AU on UHF with 11mW output using spread spectrum with 100 kHz bandwidth.

These frequencies have been coordination by the IARU Satellite Panel:
+ 1k2 or 9k6 BPSK Telemetry downlink 145.840 MHz
+ FUNcube-2 1k2 BPSK Telemetry downlink 145.915 MHz
+ FUNcube-2 Transponder SSB/CW uplink 435.080 - 435.060 MHz and downlink 145.930 -145.950 MHz
+ S Band downlink 2401.0 MHz
+ myPocketQub 437.425-437.525 MHz

More information is available at:
http://www.ukspaceagency.bis.gov.uk/21973.aspx

[ANS thanks AMSAT-UK for the above information]

South Korea, Brazil, Ukraine Heading for Orbit

Brazil-Ukraine

News posted on Space-Travel.com reports that Brazil and Ukraine are partners in Alcantara Cyclone Space (ACS), a company which is preparing for the launch of the Cyclone-4 rockets from Brazil's Alcantara base in the northeastern Maranhao state.

The Ukrainian Yuzhnoye engineering office is working on the development of Cyclone-4, a new Cyclone series vehicle to be commercialized exclusively by ACS. The Cyclone series of launch vehicles is one of the most successful series of rockets ever developed building on the prior successes of the Cyclone-2, and Cyclone-3 series initially based on the SS-9 Scarp Intercontinental Ballistic Missile. A new third stage will enable the Cyclone-4 to inject 5,300 kg in low Earth orbit, or 1,600 kg into a geo-transfer orbit. A new 4-meter diameter payload unit is under development for the Cyclone-4.

Alcantara Cyclone Space plans the first launch from Brazil by 2014.

South Korea

This week South Korea joined the the exclusive club of countries capable of placing a satellite in space on Friday with a rocket launch from the Naro Space Center on the country's south coast. The first stage of the space vehicle is manufactured by Russia, combined with a solid-fuelled second stage built by South Korea.

Currently, only three Asian countries -- China, India and Japan -- have successfully launched a satellite into orbit.

[ANS thanks Space-Travel.com for the above information]

MASA Accepting Student Applications for HASP Balloon Flight

NASA is accepting applications from graduate and undergraduate university students to fly experiments to the edge of space on a scientific balloon during the fall of 2013.

The High Altitude Student Platform (HASP) is a balloon-borne instrument stack that provides an annual near-space flight opportunity for 12 instruments built by students. HASP houses and provides power, mechanical support, interactivity and communications for the instruments. It can be used to flight-test compact satellites, prototypes and other small payloads designed and built by students. HASP can support about 200 pounds for payloads and test articles. Since 2006, the HASP program has flown 60 payloads involving more than 500 students from 14 states, Puerto Rico and Canada. Flights are launched from the Columbia Scientific Balloon Facility's remote site in Fort Sumner, N.M., and typically achieve 15 to 20 hours' duration at an altitude of about 23 miles.

The balloon competition is a joint project between NASA and the Louisiana Space Consortium (LaSPACE) in Baton Rouge. A panel of experts from NASA's Wallops Flight Facility in Virginia and LaSPACE will review the applications and select the finalists for the next flight opportunity.

The deadline for applications for the 2013 flight is December 14. Flight information and application forms can be found on the LaSpace web: http://laspace.lsu.edu/hasp/Participantinfo.php

A related story was posted by SpaceREF at:
http://spaceref.com/news/viewpr.html?pid=38963

[ANS thanks LaSpace and NASA for the above information]

ARISS Status - 22 October 2012

1. Successful ARISS Contacts Held

On Tuesday, October 16, CRA Pozohondo in Nava De Abajo (Pozohondo), Spain hosted an Amateur Radio on the International Space Station (ARISS) contact via telebridge station LU8YY in Argentina. ISS astronaut Sunita Williams, KD5PLB chatted with students, answering 20 of their life-in-space questions. The activity was tied to lessons in astronomy, photography, radio and English as a second language. Over 100 students and guests attended. The school has posted video on its Web site:
http://edu.jccm.es/cra/cra_pozohondo

Students from the Wattsburg Area School District in Erie, Pennsylvania participated in an Amateur Radio on the International Space Station (ARISS) contact with on-orbit astronaut Sunita Williams, KD5PLB on Friday, October 19 via telebridge station VK4KHZ in Australia. Approximately 600 students were in attendance with another 400 participating from their classrooms, connected by internet. The ARISS contact was part of a comprehensive education plan which covers Robotics, Astronomy, Amateur Radio and Science.

Scouts visiting the National Scouting Museum in Irving, Texas spoke with Sunita Williams, KD5PLB via an Amateur Radio on the International Space Station (ARISS) contact on Saturday, October 20. The contact was part of the Jamboree on the Air (JOTA) weekend event whereby Scouts of all ages from around the world connect with each other using Amateur Radio equipment. Williams was able to answer over 20 questions put to her by the Scouts and had time for longer than usual answers due to sharing of the contact by Australian telebridge stations VK6MJ and VK5ZAI. The audience consisted of around 200 scouts, parents, and friends and at least three television stations and several newspapers representatives were present.

2. ARISS International Team Meeting Held

The ARISS International Team monthly teleconference was held on Tuesday, October 16. A status was given on the HamTV project as well as the new VHF unit to be flown to the ISS and subsequently installed in the Columbus Module. Minutes have been posted. See: http://ariss.rac.ca/arisstel2012-10-16.htm

3. Astronaut Training Status

Luca Parmitano, KF5KDP attended his preflight session on October 17. He is slated to fly with Expedition 36 crew in May 2013.

[ANS thanks Carol, KB3LKI, for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive additional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Lee McLamb, KU4OS
ku4os at amsat dot org